

Application No. 10/603,433
Paper Dated October 10, 2006
Reply to Office Action Dated Aug. 22, 2006
Attorney Docket No. 0116-031068

REMARKS

Independent claims 1 and 7 have been amended to further describe the cylindrical shield electrode in a way to ensure that the objective of protecting the beam from distortion is achieved. Support for the added language is found in the drawings and in the use of the word cylindrical throughout the specification. Cylindrical means relating to or having the form or properties of a cylinder. A cylinder is defined as the surface traced by a straight line moving parallel to a fixed straight line and intersecting a fixed plane or closed curve. Clearly, any line has a certain length. The shield electrode 8 shown in the Applicant's drawings and as described in paragraph [0022] is disposed between the objective lens 3 and the specimen 4 to protect the electron beam. The shield electrode as shown in the drawings is clearly cylindrical in the sense of having walls of some length along the cylindrical axis which length extends substantially entirely between the objective lens and the specimen.

The Examiner has rejected claims 1 to 9 under 35 U.S.C. § 103(a) considering Todokoro et al. U.S. Patent No. 6,444,981 in view of Winkler et al. U.S. Patent Publication No. US 2002/0053638 A1. The Examiner states:

With respect to claims 1-9, Todokoro et al. fail to disclose a specimen tilting means relative to electron beam. Winkler et al., however, disclose a specimen tilting means relative to the electron beam axis (para 0005, lines 1-6 and 15 in Fig. 3).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine methods and apparatus of Todokoro and Winkler et al. and add features like a retracting mechanism for retracting shield electrode, or means of moving shield electrode along the beam axis, or varying distance between the specimen and the objective lens, because Todokoro et al. teach (col. 1, lines 29-35) that since the micro-processing has been greatly improved in the semiconductor industry, SEM have been widely used for examining the processing of semiconductor elements in place of optical microscope.

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Reconsideration of the amended claims is respectfully requested.

It is far from clear that Winkler et al. disclose a stage with a mechanism for tilting a specimen. The Examiner cites paragraph [0005] and lines 1-6 and Fig. 3 of Winkler et al. which are consistent with a specimen that has been manually placed with the surface tilted to the optical axis. Clearly, there is no discussion of the problem addressed by the Applicant; namely, the distortion of the electron beam due to the tilt of the specimen stage which is maintained at a retarding voltage. Even if Winkler et al. suggested a tilted specimen and stage with a tilt angle sufficient to distort the shape of the beam, there is no recognition of this problem, let alone a solution provided by the Applicant.

In any event, the selection of elements from the Todokoro et al. and Winkler et al. patents and the reconstruction as suggested by the Examiner would not provide the apparatus and method claimed by the Applicant.

The Examiner appears to equate the shield electrode 27 of Figure 2 of Todokoro et al. with the “front end electrode” of Applicant’s claim 1 and the control electrode 28 of Todokoro et al. with the “cylindrical shield electrode” of Applicant’s claim 1.

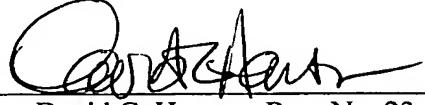
Neither shield electrode 27 nor the control electrode 28 is cylindrical or surrounds an electron beam path extending substantially entirely between the objective lens and the specimen. These features are essential to obtain the objective of preventing distortion of the electron beam.

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In view of the foregoing remarks and amendments, it is urged this case is now
in condition for allowance.

Respectfully submitted,

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